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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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STEVEN I. WEISBURD
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
1177 AVENUE OF THE AMERICAS
41st FLOOR
NEW YORK, NY 10036-2714

EXAMINER

D AGOSTA, STEPHEN M

ART UNIT

PAPER NUMBER

2683

DATE MAILED: 02/11/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/894,396

Applicant(s)

OKANOUE ET AL.

Examiner

Stephen M. D'Agosta

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-132 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 62-132 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 11, 12, 14, 16-21, 23, 26, 27, 29, 31-36, 38, 41, 42, 44, 46-51, 53 and 56-67 is/are rejected.
- 7) ☒ Claim(s) 7, 9-10, 13, 15, 22, 24-25, 28, 30, 37, 39-40, 43, 45, 52, 54-55, 58 and 60 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3a, 3b</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. **Claims 2, 5, 9, 15, 61-65, 67, 87-89 and 91** objected to because of the following informalities: The claims reference numbered steps (eg. eleventh step in claim 2) without discussing ALL previous steps (eg. fourth through tenth, since claim 1 disclosed steps one-three). The examiner interprets the claims as being generic steps (eg. un-numbered) which would be performed in the order they appear in the claim.

Appropriate correction is required – either add in the missing steps OR remove the step numbers to make them generic.

Failure to modify the claims will result in a USC 112 rejection.

2. **Claim 5** objected to because of the following informalities: The term “input and edition” is interpreted to be “input and editing” (as disclosed in similar claim 20).

Appropriate correction is required – Failure to modify the claims will result in a USC 112 rejection.

3. **Claim 6** objected to because of the following informalities: The term “convenient for a user” is a broad term and the examiner has difficulty in determining its intended meaning. The examiner interprets it to mean that the output can be interpreted visually from directly viewing a picture/graphic which shows good/poor areas of RF communications based on the inputted data.

Appropriate correction is required – Failure to modify the claims will result in a USC 112 rejection.

Information Disclosure Statement

The information disclosure statement filed 6-18-03 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the **relevance**, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 12, 16, 19, 27, 31, 34, 42, 46, 49 and 57 rejected under 35

U.S.C. 103(a) as being unpatentable over Takano et al. US 5,890,076 and further in view of Almeida et al. US 6,356,758 (hereafter Takano and Almeida).

For claims 1, 16, 31 and 46, Takano teaches a propagation environment notification method (C9, see claim #10 – teaches a method) in a radio communication system constituted by a radio base station (title, abstract) and C3, L61-65 and C4, L19-30), comprising;

A first step of sending (eg. inputting) conditions about a user's area layout (figure 2, steps 201-203)

A second step of generating said user's area radio propagation environment information based on said conditions by said server receiving said conditions (figure 1 shows the server/computer that performs the calculations and C3, L61-65 and C4, L19-46)

A third step of sending (eg. displaying) said radio propagation environment information from said server to the user (figure 3 shows the computer and "output portion" which is the calculated propagation environment information as discussed in the second step which is outputted to the computer user)

But is silent on a radio terminal that sends conditions about a user's layout from said user terminal to a server via a communication line AND sending information to said radio user terminal via the communication line.

Takano's teachings are directed to a computer located at the base station and hence does not disclose a user with a mobile "radio terminal" that transmits data to/from said base station computer.

Almeida discloses wireless tools for cell site planning/simulation (title, abstract) whereby the network administrator inputs data to a server via a terminal/computer (C4, L48-63) that can be standalone (eg. a mobile laptop) or wired/wireless LAN connected C4, L56 for wired embodiment or C5, L15-21 for wireless embodiment). Figure 3b shows how the network manager can modify various parameters regarding the cell site being planned/modeled (#357 allows for low/high number of buildings/obstacles). The examiner notes that the Pentium computer disclosed by Almeida is available in a laptop configuration and would benefit a network administrator since they could carry it to a cell site location and input data based on actually visiting said site (instead of guessing at the topography, man-made obstacles, etc.). Secondly, wireless laptop modems and client-server applications are well known in the art and allow the client and server to be physically separated.

As per claims 16 and 31, Takano in view of Almeida teaches all the above and an apparatus/system (see C6-7, claim #1 or claim #3). The examiner also notes that the computer/server disclosed above reads on an object apparatus since it is interpreted as an apparatus that provides computing operations on the received data.

As per claim 46, Takano does teach a radio base station which houses the computer/server (figure 1).

It would have been obvious to one of ordinary skill in the art of RF communications, at the time of applicant's invention to modify Takano, such that the user can input data from a mobile/radio terminal, to provide means for the network manager to roam the cell site area being planned/simulated for input of the most accurate data possible.

Claims 4, 19, 34 and 49 are rejected based on Takano in view of Almeida as discussed in claim 1/16/31/46 and Takano teaches wherein said conditions are comprised of user's area appliance placement information (eg. obstacles in figure 2, #202) and radio base station information (figure 2, #204-#205 uses inputted base station data).

Claims 12, 27, 42 and 57 is rejected based on Takano in view of Almeida as discussed in claim 1/16/31/46 and Takano teaches wherein the radio propagation environment information is said second step is generated by using a propagation simulating program (abstract and figure 2, #204 teach performing line-of-sight calculations which inherently requires the software to simulate RF propagations based on the environment and obstacle information inputted).

Claims, 2-3, 6, 8, 17-18, 21, 23, 32-33, 36, 38, 47-48, 51 and 53 rejected under 35 U.S.C. 103(a) as being unpatentable over Takano in view of Almeida as applied to claims 1, 16, 31, 46 above, and further in view of Parthasarathy et al. US 6,347,398 (hereafter Parthasarathy).

Claims 2, 17, 32 and 47 are rejected based on Takano in view of Almeida as discussed above in claim 1/16/31/46 and Takano teaches wherein said first step comprises:

An eleventh step of sending a service start command from said user terminal to said server (figure 2, "start" is interpreted as the user starting the application which inherently sends a notification [eg. start command] to the server)

A thirteenth step of inputting said conditions from said user terminal based on said software for clients (figure 2, steps 201-205), and

But is silent on a fourteenth step of sending said conditions from said user terminal to said server AND a twelfth step of sending software for clients of predetermined form to said user terminal from said server receiving said service start command.

The rejection for Claim 1 above disclosed sending data from a user terminal to the server.

The examiner interprets the Takano/Almeida combination as comprising a user terminal with the software already loaded on the terminal – hence no download is required.

Parthasarathy teaches automatic downloading of software from a server to a client terminal (abstract, figures 2 and 4, and claim 17, see columns 31-32).

It would have been obvious to one of ordinary skill in the art of RF communications, at the time of applicant's invention to modify the Takano/Almeida combination above, such that software can be downloaded, to provide new updates/releases to the user while they roam to ensure they have the latest software.

Claims 3, 18, 33 and 48 are rejected based on Takano in view of Almeida and Parthasarathy as discussed in claim 2/17/32/47 and Takano teaches wherein said software for clients comprises:

Process of obtaining said conditions (figure 2 steps 201-202 teaches inputting condition data)

Processing of converting said conditions into formats capable of being used in processing of said server's part (figure 2, steps 203-205 teaches processing the inputted condition data and processing it at the server), and

Format conversion and display processing for presenting to the user said radio propagation environment information obtained through the processing on said server's part (figures 4, 6-7 9-11, 13 show output data that can be displayed on the user terminal showing where good/bad RF communications exist, also see C4, L14-30).

Claims 6, 21, 36 and 51 are rejected based on Takano in view of Almeida and Parthasarathy as discussed in claim 1/17/33/47 and Takano teaches

A display portion for said display processing (figure 4 shows the output that is displayed on a computer screen).

but is silent on software for clients comprises: An editor portion for said processing of obtaining conditions, and

Almeida teaches a tool that can store, display and provide data manipulation to a user (figure 2) and figure 3a shows a display screen with several control/editing functions at the top of the screen (ie. Fault, Config, Accl, Perform, Secure, Options) all of which read on the claim.

The examiner also notes that editors are well known in the art of software engineering and disclosed similar functions from Microsoft (see claim 5 above).

It would have been obvious to one of ordinary skill in the art of RF communications at the time of applicant's invention to modify the combination above, such that editing is supported, to provide means for the user to modify their data to run multiple simulations.

Claims 8, 23, 38 and 53 are rejected based on Takano in view of Almeida as discussed in claim 6/21/36/51 and Takano **is silent on**

Wherein said display portion has a function of having said radio propagation environment information displayed on said user terminal in a form convenient for the user.

Takano teaches a graphical output that can be visually viewed by the user to directly understand where good/poor RF communications are located based on the user-inputted data (figure 4 shows "circles" for good communications and "blanks" for poor areas, also see C6, L11-30).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the above combination, such that data is displayed in a convenient format, to provide ease in reading/interpreting the output from the computer simulation program.

Claims 5, 11, 20, 26, 35, 41, 50 and 56 rejected under 35 U.S.C. 103(a) as being unpatentable over Takano in view of Almeida and Parthasarathy as applied to claims 2, 17, 32 and 47 above, and further in view of Microsoft Back Office programs (hereafter Microsoft).

Claims 5, 20, 35 and 50 is rejected based on Takano in view of Almeida as discussed in claim 1/16/32 and Takano teaches wherein said thirteenth step is comprised of:

A 24th step of converting said input conditions into formats capable of being used on said server's part (figure 2, steps 203-205 teaches processing the inputted condition data and processing it at the server),

But is silent on

A 21st step of performing input and editing of user conditions – said user's area appliance placement and said radio base station information,

A 22nd step of making a determination oh whether or not said user's conditions are correctly inputted,

A 23rd step of making a determination on completion of said input conditions.

Takano does teach "manipulating the data" which reads on editing functions (C2, L59-65). Takano teaches use of Microsoft Windows (C5, L2-10).

The examiner notes that steps 21-23 are "editing and error checking" limitations which are obvious and included in most/all software applications. Microsoft's Back Office suite, for example, provides software applications that allow a user to input data and edit it as they see fit (eg. ToolBar and Formatting allow Cutting, Pasting, Font manipulation, indenting, etc.). Secondly, Microsoft provides error checking for many different situations since improperly inputted data will result in incorrect results (eg. when using EXCEL, you cannot add characters, only number) – this also relates to ensuring that at least a certain amount of information is inputted by the user as well (eg. when performing addition in EXCEL, you must type in at least two numbers. For this patent application, a user would input at least one transmitter and one obstacle). So

steps 21-23 would be provided by one skilled in the art since it is expected that the software designer will provide editing and error checking for optimal software operation.

It would have been obvious to one of ordinary skill in the art of RF communications, at the time of applicant's invention to modify the Takano/Alemeida/Parthasarathy combination above, such that editing and error-checking is provided, to ensure ease of use of the application so the user can manipulate/edit data for different simulations while the application checks/verifies inputted data for accuracy.

Claims 11, 26, 41 and 56 is rejected based on the combination above as discussed in claim 5/20/35/50 and Takano **is silent on**

Wherein in said 21st step, information of the

- position in which said radio base station is placed,
- information of antenna types, and
- information of sending power

are inputted as radio base station information.

Almeida teaches location/position of the cell site(s) being tested (figure 3a, #325 is a BTS located on a map which inherently requires a user to input the location of said BTS), antenna type (C9, L34-45) and power information (figure 3c and C7, L5-19).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the above combination such that the program uses position, type and power information of an antenna, to provide means to model the environment based on different types of antennas that may be encountered in the field.

Claims 14, 29, 44 and 59 rejected under 35 U.S.C. 103(a) as being unpatentable over Takano in view of Almeida as applied to claims 1, 16, 31 and 46 above, and further in view of J.W. McKown et al. "Ray Tracking as a Design Tool for Radio Networks" (hereafter McKown)

Claims 14, 29, 44 and 59 is rejected based on Takano in view of Almeida as discussed in claim 1/16/31/46 **but are silent on** wherein the radio propagation environment information generated in said second step is obtained by generating rays based on the antenna pattern defined in said radio base station and considering reflection and diffraction by the appliance in said area.

McKown teaches ray tracing as a design tool for Radio Networks (title) to understand indoor/urban radio propagation (eg. reflection and diffraction) of obstacles in the operating environment (abstract, all of page 27 and summary on page 30).

It would have been obvious to one of ordinary skill in the art of at the time of applicant's invention to modify the above combination, such that the information generated is obtained by rays based on antenna pattern and considers reflection/diffraction of an appliance, to provide means for the program to determine scattering based on objects in the area being modeled.

Claim 61 rejected under 35 U.S.C. 103(a) as being unpatentable over Takano in view of Almeida and further in view of Microsoft Back Office programs (hereafter Microsoft).

For claim 61, Takano teaches record medium recording with a control program of a propagation environment notification method (C9, see claim #10 – teaches a method and figure 1 teaches a computer system/record medium recording) in a radio communication system constituted by a radio base station (title, abstract) and C3, L61-65 and C4, L19-30), comprising;

A first step of sending (eg. inputting) conditions about a user's area layout (figure 2, steps 201-203)

A second step of generating said user's area radio propagation environment information based on said conditions by said server receiving said conditions (figure 1 shows the server/computer that performs the calculations and C3, L61-65 and C4, L19-46)

A third step of sending (eg. displaying) said radio propagation environment information from said server to the user (figure 3 shows the computer and "output portion" which is the calculated propagation environment information as discussed in the second step which is outputted to the computer user)

But is silent on a radio terminal that sends conditions about a user's layout from said user terminal to a server via a communication line AND sending information to said radio user terminal via the communication line AND wherein said third step is comprised of:

A 21st step of performing input and editing of user conditions – said user's area appliance placement and said radio base station information,

A 22nd step of making a determination oh whether or not said user's conditions are correctly inputted,

A 23rd step of making a determination on completion of said input conditions.

Takano's teachings are directed to a computer located at the base station and hence does not disclose a user with a mobile "radio terminal" that transmits data to/from said base station computer.

Almeida discloses wireless tools for cell site planning/simulation (title, abstract) whereby the network administrator inputs data to a server via a terminal/computer (C4, L48-63) that can be standalone (eg. a mobile laptop) or wired/wireless LAN connected C4, L56 for wired embodiment or C5, L15-21 for wireless embodiment). Figure 3b shows how the network manager can modify various parameters regarding the cell site being planned/modeled (#357 allows for low/high number of buildings/obstacles). The examiner notes that the Pentium computer disclosed by Almeida is available in a laptop configuration and would benefit a network administrator since they could carry it to a cell site location and input data based on actually visiting said site (instead of guessing at the topography, man-made obstacles, etc.). Secondly, wireless laptop modems and client-server applications are well known in the art and allow the client and server to be physically separated.

Takano does teach "manipulating the data" which reads on editing functions (C2, L59-65). Takano teaches use of Microsoft Windows (C5, L2-10).

The examiner notes that steps 21-23 are "editing and error checking" limitations which are inherently included software applications. Microsoft Windows, for example, provides software applications that allow a user to input data and edit it as they see fit (eg. "ToolBar" and "Formatting" allow Cutting, Pasting, Font manipulation, indenting, etc.). Secondly, Microsoft provides error checking for many different situations since improperly inputted data will result in incorrect results (eg. when using EXCEL, you cannot add characters, only numbers) – this also relates to ensuring that at least a certain amount of information is inputted by the user as well (eg. when performing addition in EXCEL, you must type in at least two numbers. For this patent application, a user would input at least one transmitter and one obstacle). So steps 21-23 would be provided by one skilled in the art since it is expected that the software designer will provide editing and error checking for optimal software operation.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the above combination, such that the user can input data from a mobile/radio terminal and have editing/error-checking, to provide means for the network manager to roam the cell site area being planned/simulated for input of the most accurate data possible.

Allowable Subject Matter

Claims 62-132 allowed.

Claim 7, 9-10, 13, 15, 22, 24-25, 28, 30, 37, 39-40, 43, 45, 52, 54-55, 58 and 60 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Rappaport et al. US 6,317,599
2. Pickering et al. US 5,491,644

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SMD



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600